

1. A self-aligning motor mount comprising:
  - a mounting bracket that can be attached to a machine frame;
  - a locator ring that can be attached to a drive motor front bearing hub and in alignment with a drive pinion gear center line, the locator ring further being set to a predetermined angle for locating the drive pinion gear with a driven gear to achieve correct backlash;
  - a section of the locator ring including a slot on a pinion centerline arc that can engage a necked down shaft extension of the shaft on which the driven gear is mounted;
  - a pin in the locator ring, opposite the slot, that ensures that the motor is in the correct position on the mounting bracket; and
  - an opening in the mounting bracket into which the pin drops when the motor and assembly bracket are coupled, prior to assembly on a machine back plane, thus preventing the motor from rotating 360 degrees and keeping the locator opening on a correct side of the shaft extension.
2. The mount of claim 1 further comprising an ear projecting from the locator ring in which the slot is located.
3. The mount of claim 1 further comprising an ear projecting from the locator ring in which the pin is located.
4. The mount of claim 1 further comprising first and second ears in which the slot and pin are located.

5. The mount of claim 1 wherein the guide ring is a separate part that is attached to a motor frame.

6. The mount of claim 1 wherein the guide ring is formed integrally with and as a single piece with a motor frame.

7. The mount of claim 1 wherein the locating feature is a pilot diameter of the guide ring.

8. In a device including a driving gear mounted on a drive shaft selectively driven by a motor and a driven shaft including a shaft extension and on which a driven gear is mounted, a self-aligning motor mount comprising:

a locator ring coaxially arranged about the drive shaft;

a motor mounting bracket including an aperture through which the drive shaft and the guide ring extend;

a first ear projecting from an outer circumference of the guide ring;

a slot on the first ear arranged to interact with the driven shaft;

a second ear projecting from the outer circumference of the guide ring; and

a pin that, when the motor is rotated from an initial position in a first direction, positively affixes the motor in a particular position relative to the motor mounting bracket.

9. The mount of claim 8 wherein the slot of the first ear comprises a locating feature that engages the driven shaft when the motor is rotated from the initial position in a second direction, thus aligning the drive and driven shafts.

10. The mount of claim 9 wherein the slot disengages the driven shaft when the motor is rotated back to the initial position.

11. The mount of claim 8 wherein the motor mounting bracket includes a guide slot into which the pin projects and in which the pin travels when the motor is rotated.

12. The mount of claim 8 wherein the locator ring is a separate part that is attached to a motor frame.

13. The mount of claim 8 wherein the locator ring is formed integrally with and as a single piece with a motor frame.

14. The mount of claim 8 wherein the slot is a pilot diameter of the guide ring.

15. A motor mounting method comprising:  
providing a mounting bracket, for attachment to a machine frame;  
providing a locator ring on a drive gear center line;  
providing a locator section of the locator ring;  
providing a shaft extension of a driven shaft;  
providing a pin in the locator ring opposite the locator section of the locator ring  
arranged to ensure that the motor is in the correct position on the  
mounting bracket;  
providing an opening in the mounting bracket;  
rotating the motor relative to the locator ring until the pin drops into the  
opening, thus preventing the motor from rotating 360 degrees relative  
to the mounting bracket and keeping the locator section on a correct  
side of the shaft extension;

placing an assembly comprising the locator ring, motor, and mounting bracket  
on the machine frame;  
rotating the motor, mounting bracket, and locator ring until the locator section  
engages the shaft extension;  
firmly affixing the mounting bracket to the machine frame;  
rotating the motor and locator ring until mounting points of the motor align with  
mounting points of the bracket; and  
firmly affixing the motor to the mounting bracket.

16. The method of claim 1 wherein providing a locator section comprises providing a wide rounded slot on a pinion centerline arc that can engage the shaft extension on which a driven gear is mounted.

17. The method of claim 1 wherein placing the assembly comprising the locator ring, motor, and mounting bracket on the machine frame comprises attaching with screws without fully tightening, thereby allowing the assembly to float.

18. The method of claim 17 wherein a hole pattern of the assembly and a hole pattern of the frame are such that only one orientation of the assembly is possible.

19. The method of claim 15 wherein firmly affixing the motor to the mounting bracket comprises securing the motor to the mounting bracket with screws.

20. The method of claim 15 wherein providing the locator ring comprises attaching the guide ring to the motor frame.

21. The method of claim 15 wherein providing the guide ring comprises forming the guide ring integrally and as one piece with the motor frame.